

Listing of the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1-104. (Canceled)

105. (New) An *in vitro* method for producing one or more product nucleic acid molecules comprising two or more *lox* or *att* sites, the method comprising:

- (a) generating a linear nucleic acid molecule; and
- (b) ligating the linear nucleic acid molecule with one or more adapters comprising one or more *lox* or *att* sites, such that one adapter is added to each terminus of the linear nucleic acid molecule, thereby producing the product nucleic acid molecule and wherein the one or more *lox* or *att* sites at each terminus of the linear nucleic acid molecule do not recombine with each other.

106. (New) The method of claim 105, wherein the linear nucleic acid molecule is ligated to one or more adapters using a topoisomerase.

107. (New) The method of claim 105, wherein the linear nucleic acid molecule is generated by polymerase chain reaction.

108. (New) The method of claim 105, wherein the linear nucleic acid molecule is produced by mechanical or enzymatic techniques.

109. (New) The method of claim 105, wherein the linear nucleic acid molecule is produced by digesting one or more nucleic acid molecules with one or more restriction endonucleases.

110. (New) The method of claim 105, wherein the linear nucleic acid molecule is an isolated genomic DNA molecule.

111. (New) The method of claim 105, wherein the linear nucleic acid molecule is a cDNA molecule.

112. (New) The method of claim 105, wherein the *lox* site is selected from the group consisting of *loxP* and *loxP511*.

113. (New) The method of claim 105, wherein the *lox* or *att* sites are engineered *lox* or *att* sites.

114. (New) An *in vitro* method for producing one or more product nucleic acid molecules comprising two or more *att* sites, the method comprising:

- (a) generating a linear nucleic acid molecule; and
- (b) ligating the linear nucleic acid molecule with one or more adapters comprising one or more *att* sites, wherein the *att* sites are selected from the group consisting of lambdoid *attB*, lambdoid *attL*, lambdoid *attP* and lambdoid *attR* sites, such that one adapter is added to each terminus of the linear nucleic acid molecule, thereby producing the product nucleic acid molecule.

115. (New) The method of claim 114, wherein the linear nucleic acid molecule is ligated to one or more adapters using a topoisomerase.

116. (New) The method of claim 114, wherein the *att* sites at each terminus of the linear nucleic acid molecule do not recombine with each other.

117. (New) The method of claim 114, wherein the linear nucleic acid molecule is generated by polymerase chain reaction.

118. (New) An *in vitro* method for producing one or more product nucleic acid molecules comprising one or more *lox* or *att* sites, the method comprising:

- (a) generating a first linear nucleic acid molecule; and

- (b) ligating the first linear nucleic acid molecule with one or more second linear nucleic acid molecules comprising one or more *lox* or *att* sites, such that one second linear nucleic acid molecule is added to each terminus of the first linear nucleic acid molecule, thereby producing the product nucleic acid molecule and wherein the *lox* or *att* sites at each terminus of the linear nucleic acid molecule do not recombine with each other.

119. (New) The method of claim 118, wherein the first linear nucleic acid molecule is ligated with one or more second linear nucleic acid molecules using a topoisomerase.

120. (New) The method of claim 118, wherein the first linear nucleic acid molecule is generated by polymerase chain reaction.

121. (New) The method of claim 118, wherein the first linear nucleic acid molecule is produced by digesting one or more nucleic acid molecules with one or more restriction endonucleases.

122. (New) An *in vitro* method for producing one or more product nucleic acid molecules comprising one or more *att* sites, the method comprising:

- (a) generating a first linear nucleic acid molecule; and
- (b) ligating the first linear nucleic acid molecule with one or more second linear nucleic acid molecules comprising one or more *att* sites, wherein the *att* sites are selected from the group consisting of lambdoid *attB*, lambdoid *attL*, lambdoid *attP* and lambdoid *attR* sites, such that one second linear nucleic acid molecule is added to each terminus of the first linear nucleic acid molecule, thereby producing the product nucleic acid molecule.

123. (New) The method of claim 122, wherein the first linear nucleic acid molecule is ligated with one or more second linear nucleic acid molecules using a topoisomerase.

124. (New) The method of claim 122, wherein the *att* sites at each terminus of the linear nucleic acid molecule do not recombine with each other.

125. (New) The method of claim 122, wherein the first linear nucleic acid molecule is generated by polymerase chain reaction.

126. (New) An *in vitro* method for producing one or more product nucleic acid molecules comprising a *lox* and an *att* site, the method comprising:

- (a) generating a first linear nucleic acid molecule; and
- (b) ligating the first linear nucleic acid molecule to a second linear nucleic acid molecule comprising a *lox* site and a third linear nucleic acid molecule comprising an *att* site, such that the second linear nucleic acid molecule is ligated to one terminus of the first nucleic acid molecule and the third linear nucleic acid molecule is ligated to the other terminus of the first nucleic acid molecule, thereby producing the product nucleic acid molecule.

127. (New) The method of claim 126, wherein the first linear nucleic acid molecule is ligated with the second or third linear nucleic acid molecules using a topoisomerase.

128. (New) The method of claim 126, wherein the first linear nucleic acid molecule is generated by polymerase chain reaction.

129. (New) The method of claim 126, wherein the first linear nucleic acid molecule is produced by digesting one or more nucleic acid molecules with one or more restriction endonucleases.